

“Getting to Zero!” VA Pittsburgh Healthcare System MRSA Prevention Initiative

The VA Pittsburgh Healthcare System (VAPHS) is using the Positive Deviance approach to advance their “Getting to Zero MRSA Initiative”. M-R-S-A is an acronym for Methicillin-Resistant Staphylococcus Aureus. *Staphylococcus Aureus* is a type of bacteria that frequently inhabits the skin or nostrils of healthy people, and is a more serious form of this bacterium due to its resistance to antibiotics commonly used in treatment.

Today MRSA is one of the most rapidly growing and virulent healthcare associated infections. It is primarily spread by direct physical contact with a person or object that is carrying the bacteria such as shared equipment. In the hospital setting, the most common vector of transmission is health care workers' hand.

Project goal:

The aim of the project is to combine the lessons learned in controlling MRSA infection from use of the TPS model with the use of the PD approach to promote culture/behavior change to combat the prevalence of MRSA infections at the VAPHS. The goal is to achieve 50% reduction in the MRSA infection rate by August 2006 and to eliminate endemic MRSA at VAPHS by August 2007.

Background:

The VA Pittsburgh Healthcare System began an organizational commitment to reducing hospital acquired infections in October 2001. Despite a hospital acquired infection rate that was substantially less than the national average, VAPHS began an initiative to strive to achieve a MRSA prevention goal of “Getting to Zero.” Working in conjunction with Pittsburgh Regional Healthcare Initiative (PRHI) and Centers for Disease Prevention (CDC), VAPHS adapted the principles of the Toyota Production System (TPS) as a process improvement strategy to reduce the transmission of MRSA infection. This effort resulted in a dramatic reduction of surgical site infection in two units of the acute care facility at University drive over a four year period.

MRSA and the Positive Deviance approach

Because the positive outcome did not spread beyond these wards to the rest of the hospital, in July of 2005 VAPHS incorporated the Positive Deviance approach in its efforts to foster leadership support of staff-owned and operated implementation of transmission-based precautions hospital wide.

The model developed by the VAPHS is an asset-based method of identifying individuals and groups of individuals within and outside the system that perform uncommonly well in preventing MRSA infections when compared with others who have access to the same resources. It then enables those whose practices need change in order to achieve comparable results, to look at the behaviors and

practices that enabled the successful group to achieve their positive outcomes. The PD design seeks to implement a plan involving everyone through a process of self-discovered, analyzed, designed, and implemented opportunities to practice those strategies and behaviors that enable them to prevent MRSA transmission and associated infections.

Program components

The key components of the VA Pittsburgh MRSA Bundle include:

- 1) an aggressive hand hygiene implementation program
- 2) MRSA Surveillance cultures on admission and discharge and active surveillance for MRSA-positive patients
- 3) contact precautions for any patient that is infected or colonized with MRSA (requires health care workers to wear gloves, gowns, and sometimes masks while providing care)
- 4) Cultural transformation with staff and leadership engagement through the use of the PD approach.
- 5) Ongoing monitoring of process and outcome measures

Results:

Consistent use of the VA Pittsburgh MRSA Bundle together with other infection prevention practices such as skin preparation, surgical and dressing change technique, appropriate use of antibiotics and glucose control markedly reduced MRSA-related infections in both their acute and long term care facilities. Through Positive Deviance, VA Pittsburgh has been able to create and implement a staff-owned and operated MRSA Prevention Program that is efficient, measurable and sustainable.

Over an 8 month period there was only two surgical site infections where the two facilities combined would have on average 40 surgical site infections a year.

The dementia unit at Ground South has had neither transmission nor infection in the 4th quarter of FY06.

Comments:

Some of this success is attributable to the application of Positive Deviance principles, i.e.; fostering community ownership through involvement of all the stakeholders, beyond the usual suspects, self-discovery by stakeholders of existing solutions, hidden in plain view, immediacy of action based on staff generated ideas for solutions, and emphasis on practice rather than knowledge throughout the process.

In addition to these principles, the on-going measurement reinforces change as data is fed back to the community to analyze and act upon them.

The Positive Deviance approach was incorporated to help foster hospital wide cultural change via staff engagement and leadership support required for a sustainable and successful MRSA prevention program. It became evident that

previous barriers to success were not necessarily a result of a knowledge deficit on MRSA transmission and appropriate precautions but rather **HOW** best to implement these strategies throughout the hospital. The application of positive deviance principles has provided opportunities for staff to dialogue openly with their peers and leadership to uncover those existing behaviors and practices that are effective. The staff is empowered to create new solutions to problems in their own unique culture and environment. Positive Deviance has also provided the impetus for engaging patients and families to be part of prevention; making the program truly patient-centered.

Example of PD behaviors discovered through focus group discussions include: a nurse telling her patients that they and their visitors can use the soap dispenser in the room, another nurse at the long term care facility, ensuring that in-patients wash their hands before eating a snack

Staff generated activities: Equipping the transport vans with soap dispensers for transport personnel and patients use; reviewing the facility lay out and deciding where to put new soap dispensers (cafeteria, library) and developing new posters and signs.

At unit level: developing new protocols to ensure that all patients are swabbed for MRSA colonization and infection, terminal cleaning of all the patients' rooms decided by the environment staff, reorganizing location and use of gowns to ensure proper gowning. Physical Therapy unit: The patient journey from nursing to therapy was a potent source of transmissions. Physical therapists did not have adequate information regarding MRSA risks for patients they were receiving and assisting, nor did they know if they had MRSA colonized or infected patients among their clients. The therapists requested an updated list of colonized and infected patients coming to therapy and redesign their schedule to prevent transmission from infected patients to others.

Shared learning gained through focus groups discussions (later called discovery and action dialogues) and role play enabled the staff to quickly start designing/applying new and innovative precautions in the context of challenging situations such as a code (cardiac arrest), poorly designed infrastructure and contaminated medical equipment .

Patients generated activities: creation of an informative leaflet on MRSA for veterans and their families, participation in decision on where the soap dispensers should be located in the hospital, peer advocacy for hand washing

Cultural change:

The leadership group has been transformed from being the police and sole responsible for infection control to providing support and technical assistance to staff-initiated improvements to prevent MRSA infection and transmission.

Leaders

- Set the direction
- Roll the boulders
- Create freedom and opportunities for staff to act

Staff

- Build networks of relationships and trust
- Collaborate in solving problems
- Own and constantly improve solutions

MRSA prevention has become the focal point for unlikely partners such as the environmental staff and the clinical staff, patients and nursing staff both at unit level and hospital wide at the long term care facility.

Creation of new networks: at the long term care facility, self-appointed MRSA point persons from each unit have formed a forum where they learn from each other the successful behaviors and strategies that have been recently initiated in different unit, providing the opportunity to amplify success facility wide.

Note: The whole process is bathed in information. Thanks to the surveillance system, data are generated on a regular basis and given to each unit. Staff analyzes the data and act accordingly.